

**REMARKS**

Regarding the status of the present application, Claims 1-3, 7, 10-12, and 14 have been amended and Claims 1-18 are pending in this application. Reconsideration of this application is respectfully requested. It is respectfully submitted that this response does not require further searching by the Examiner, and places this application in condition for allowance, or in any event, places it in better condition for consideration on appeal.

Claims 1-14 were rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The Examiner raised issues regarding Claims 1, 10-12 and 14. These Claims have been amended to address the Examiner's issues. The undersigned attorney has met with the inventor to revise Claim 1 to clearly define the present auto-calibrating spectrometer.

The Examiner objected to the recitation in Claim 12 as reciting "a second fiber optic cable" without the recitation of a first fiber optic cable. However, it is noted that Claim 12 also refers to "a second optical element" and "a second detector", while Claims 1 and 6 recite "optical element" and "detector".

Notwithstanding this, the Claims have been amended to change the recitation of "optical element", "detector" and "fiber optic cable" in Claim 1 and other Claims to "first optical element", "first detector" and "first fiber optic cable". In view of these amendments, all pending claims are consistent, and withdrawal of the Examiner's objection to claim 12 is respectfully requested.

With specific regard to Claim 1, it has been rewritten to recite the cooperative relationships between the claimed elements that provides an operative device and which cooperate and interact with each other to provide for an auto-calibrating spectrometer. The sample under measurement is not required to calibrate the spectrometer, and amended Claim 1 reflects this.

Claim 1 now recites:

An auto-calibrating spectrometer comprising:  
a light source;  
a reference sample having known reflection;  
a detector for outputting electrical signals corresponding to light signals that are detected thereby;  
an optical element that transmits light toward the reference sample and that reflects a small amount of light;  
optical coupling apparatus that couples light from the light source to the optical element and couples light reflected from the optical element and light reflected from the reference sample to the detector;  
a shutter assembly that selectively couples light or inhibits light transmitted by the optical element to from impinging upon and being reflected by the reference sample; and  
a controller coupled to the detector that processes the electrical signals output thereby corresponding to levels of light derived from the optical element and the reference sample and implements an algorithm that calculates a calibration value for the spectrometer at each wavelength of light output by the light source using a predetermined equation to autocalibrate the spectrometer.

It is therefore respectfully submitted that Claim 1 has been amended to clearly recite all structural relationships between the components of the spectrometer to adequately define it and provide for an autocalibrating spectrometer. The autocalibrating aspects of the spectrometer are implemented by the controller and algorithm, which processes electrical signals output by the detector and calculates a calibration value for the spectrometer at each wavelength of light output by the light source.

Therefore, and in view of the above, it is respectfully submitted that Claim 1 is clear and definite. Withdrawal of the Examiner rejection of Claim 1 is respectfully requested.

Claim 10 has been amended to recite that the first focusing lens comprises the optical element recited in Claim 1.

Claims 11 and 14 have been amended to correct the recitation of R1 and T1 to Ri and Ti, respectively.

Claim 12 has recites a second optical element instead of a second focusing lens, which is in agreement with what is recited in Claim 1.

In view of the above amendment, It is respectfully submitted that Claims 10.-12 and 14 are clear and definite. Therefore withdrawal of the Examiner rejection of Claims 10.-12 and 14 is respectfully requested.

Claims 15-18 were found to be allowable over the prior art of record. The finding of allowable subject matter in this application is appreciated.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure to the extent indicated by the Examiner.

In view of the above, it is respectfully submitted that all pending claims are clear and definite and are allowable over the prior art of record. It is therefore respectfully submitted that the present application is in condition for allowance. Reconsideration and allowance of this application are earnestly solicited. It is again respectfully submitted that this response does not require further searching by the Examiner, and places this application in condition for allowance, or in any event, places it in better condition for consideration on appeal.

Respectfully submitted,



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